*Acta arachnol.*, **45** (2): 151–155, December 30, 1996

# New Records of *Tetragnatha bituberculata* (Araneae: Tetragnathidae) from Japan

Akio TANIKAWA[1)]

# 谷川明男[1)]：チヨコアシナガグモの日本での新記録

**Abstract** *Tetragnatha bituberculata* L. KOCH, 1867 is newly recorded from Japan. The species has been known from New Guinea and Australia. The features of Japanese specimens exactly agree with those of Australian specimens with the exception of lack of the auxiliary guide tooth of lower row of male chelicera.

In the spring of 1996, I found several interesting tetragnathid spiders in the mangrove forest at the mouth of Nakama River in Iriomotejima Is., Okinawa Pref., Japan. After an careful examination, I identified those specimens with *Tetragnatha bituberculata* L. KOCH, 1867. The spider will be reported in this paper with new records from Japan.

*Tetragnatha bituberculata* was described from Brisbane by L. KOCH (1867). Then, he recorded it from Rockhampton, Brisbane, Bowen and Port Mackay (L. KOCH, 1872). BRADLEY (1876) recorded the species from Katow, New Guinea. KEYSERLING (1887) recorded it from Sydney and Peack Downs, and RAINBOW (1916) recorded it from Pentland. CHRYSANTHUS (1975) described *Tetragnatha heatwolei* from Lizard Is., Great Barrier Reef. However, the species was synonymized with *T. bituberculata* by OKUMA (1987). In 1987, OKUMA revised Australian spiders of the genus *Tetragnatha*. In her excellent work, she redescribed *T. bituberculata* based on the specimens preserved in Australian Museum, Sydney. Thus, the species has been known from Australia and New Guinea up to the present.

All the Japanese materials used in this paper are preserved in the collection of the Department of Zoology, National Science Museum, Tokyo.

In this paper, the terms of the cheliceral armature are used according to OKUMA (1987). Following abbreviations are used in this paper: (a), an apophysis used for locking the female's fang during copulation; AMS, Australian Museum, Sydney; (AXl), an auxiliary guide tooth of lower row; (e), an extra tooth found between (Gu) and (T); (EX), an excrescence found on the outer edge of the fang; (Gl), the guide tooth of lower row; (Gu), the guide tooth of upper row; (L2), the next tooth of (Gl); NSMT, National Science Museum (Natural History), Tokyo; (sl), a tooth which usually slopes towards the base of the segment in the male of some species; (t), a tooth or prominence found in the male of some species; (T), the first (largest) tooth of the row proper.

Before going further, I wish to express my hearty thanks to Dr. Hirotsugu ONO,

---

1) Shichirigahama Senior High School, 2–3–1, Shichirigahama-higashi, Kamakura-shi, Kanagawa, 248 Japan
神奈川県立七里ガ浜高等学校 〒248 神奈川県鎌倉市七里ガ浜東 2–3–1

Accepted December 12, 1996

Department of Zoology, National Science Museum, Tokyo, for his constant guidance and revising the manuscript of this paper. I am deeply indebted to the late Dr. Chiyoko OKUMA, Fukuoka, for her guidance on the taxonomy of tetragnathid spiders. My sincere thanks are also due to Dr. Mike GRAY, Australian Museum, Sydney, for loaning invaluable specimens.

## ***Tetragnatha bituberculata*** L. KOCH, 1867

(Figs. 1–14)

*Tetragnatha bituberculata* L. KOCH, 1867, p.184 (female holotype from Brisbane, not examined); 1872, p. 183, pl. 15, figs. 5, 5a, 5b.——BRADLEY, 1876, p. 150.——THORELL, 1881, p. 690.——KEYSERLING, 1887, p. 220, pl. 20, figs. 2, 2a.——RAINBOW, 1911, p. 165; 1916, p. 80.——ROEWER, 1942, p. 985.——BONNET, 1959, p. 4319.——OKUMA, 1987, p. 46, fig. 5.——PLATNICK, 1989, p. 313.

*Tetragnatha heatwolei* CHRYSANTHUS, 1975, p. 13, figs. 51–53. (female holotype from Lizard Is., Great Barrier Reef, preserved in AMS, not examined.) ——BRIGNOLI, 1983, p. 225.

*Specimens examined*. JAPAN: 4 ♀ 1 ♂, near Nakama Bridge, Mouth of Nakama River, Iriomotejima Is., Okinawa Pref., 1-IV-1996, A. TANIKAWA leg (NSMT-Ar 3383-3385). AUSTRALIA: 1 ♀ 1 ♂, Long Is., MELAN, 7-X-1971, E. BALL leg (AMS-ks 14210); 1 ♀, Gordonvale, QLD, 1916, D. WASHINGTON leg (ARS-ks 14129); 1 ♂, Aloomba, QLD, 4-VIII-1972, N. COLEMAN leg (AMS-ks 14174); 1 ♀, Mt. Dryander, QLD, IV-1975, M. GRAY & C. HORSEMAN leg (AMS-ks 12831); 1 ♀, Trial Bay, NSW, 30-XII-1929, G. WHITLEY leg (AMS-ks 14215); 1 ♀ 1 ♂, Lord Howe Is., LHI (AMS-ks 14088); 1 ♀ 1 ♂, Kooragang Is., NSW, II-1982, (AMs-ks 8901, 8909); 2 ♀ 2 ♂, 4-XII-1972, 1 ♀, 2-II-1973, Careel Bay, NSW, (AMS-ks 14102-14104, 14177).

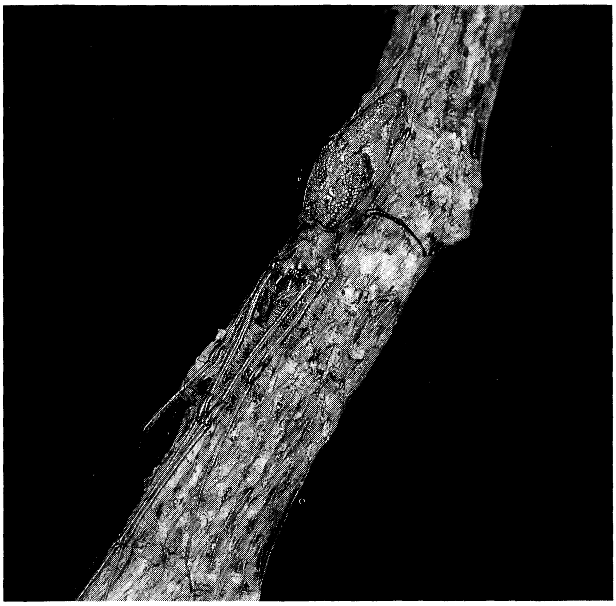
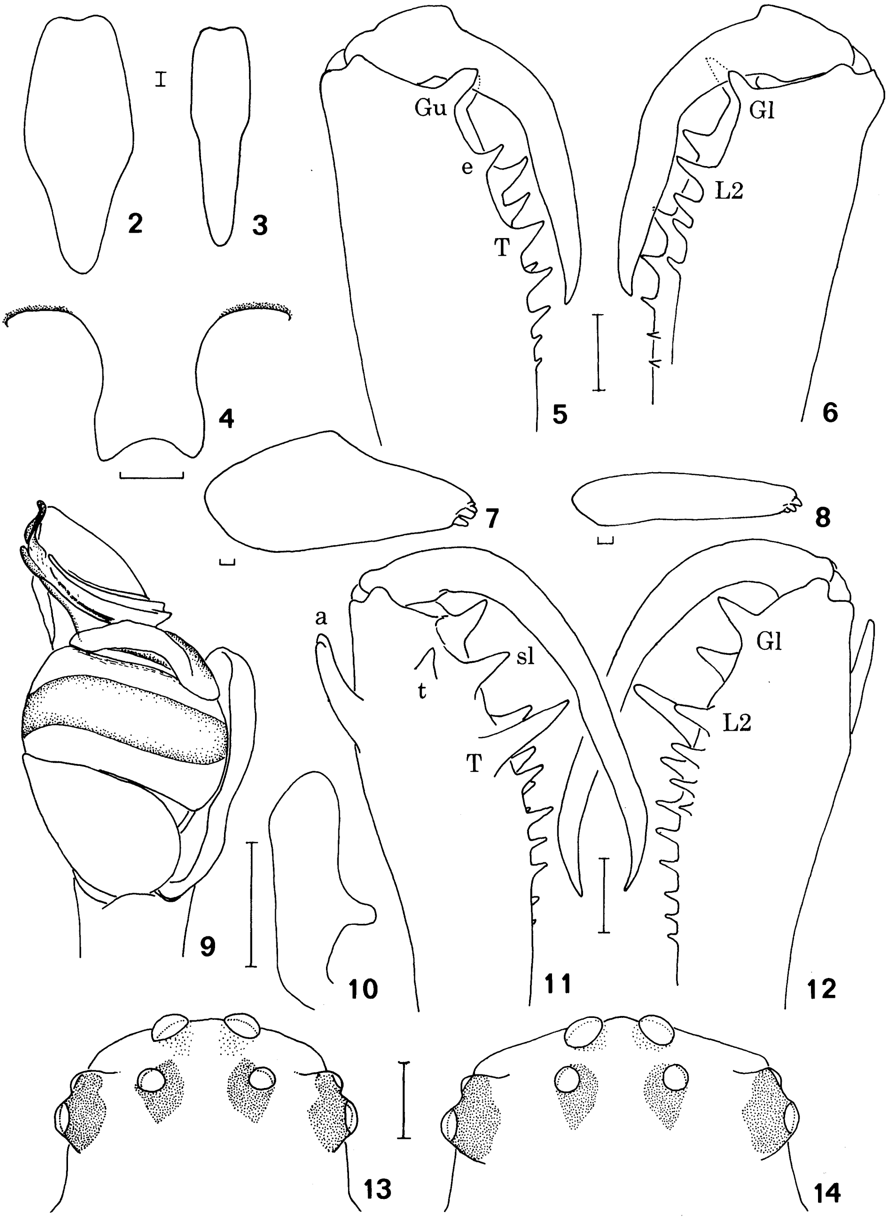


Fig. 1. *Tetragnatha bituberculata* L. KOCH, 1867, a female on a twig.



Figs. 2–14. *Tetragnatha bituberculata* L. KOCH, 1867 (female: NSMT-Ar 3383; male: NSMT-Ar 3384). ——2. Female abdomen, dosal view. 3. Male abdomen, dorsal view. 4. Female genital fold. 5. Female left chelicera, upper view. 6. Same, lower view. 7. Female abdomen, lateral view. 8. Male abdomen, lateral view. 9. Male palp, ventral view. 10. Male paracymbium. 11. Male left chelicera, upper view. 12. Same, lower view. 13. Male eye region, dorsal view. 14. Female eye region, dorsal view. (Scales: 0.25mm.)

Table 1. Measurement of leg segments of *Tetragnatha bituberculata* L. KOCH, 1867 (in mm; ♀/♂).

| Leg | Tarsus | Metatarsus | Tibia | Patella | Femur | Total |
|---|---|---|---|---|---|---|
| I | 1.47/1.40 | 5.29/6.00 | 5.00/5.77 | 1.09/0.93 | 5.12/5.47 | 17.97/19.57 |
| II | 1.03/1.00 | 3.53/3.97 | 3.26/3.83 | 0.91/0.80 | 3.74/4.07 | 12.47/13.67 |
| III | 0.47/0.57 | 1.32/1.63 | 1.03/1.33 | 0.47/0.47 | 1.79/2.00 | 5.08/6.00 |
| IV | 0.91/0.90 | 3.03/3.43 | 2.65/3.07 | 0.62/0.60 | 3.50/3.90 | 10.71/11.90 |

*Description of Japanese specimens.* Measurement (in mm). Total length, exclusive of chelicerae, ♀ 6.76–7.82, ♂ 6.67; chelicera length ♀ 1.45–1.80, ♂ 1.82; carapace length ♀ 2.18–2.51, ♂ 2.16; width ♀ 1.43–1.69, ♂ 1.36; abdomen length ♀ 4.83–5.59, ♂ 4.56, width ♀ 1.88–2.24, ♂ 1.22. Length of legs of 1 ♀ 1 ♂ from Iriomotejima Is., Okinawa Pref. (NSMT-Ar 3383–3384) as shown in Table 1.

Female: Carapace length/width 1.49–1.55. Cheliceral armature (Figs. 5–6): (Gu) large; (e) smaller than (T); (AXl) absent, fang with (EX). Length of anterior row of eyes/length of posterior row of eyes 0.71–0.92; distance between anterior median eye and anterior lateral eye/distance between posterior median eye and posterior lateral eye 0.89–1.00; distance between anterior lateral eye and posterior lateral eye/distance between anterior median eye and anterior lateral eye 0.23–0.32; median ocular area length/width 1.49–1.55, anterior width/posterior width 0.71–0.76; lateral eyes situated on a tubercle (Fig. 14). Length of leg I/length of carapace 7.23–8.06. Abdomen length/width 2.29–2.94, widest at about the middle and steeply become narrower (Fig. 2), dorsum gibbous at about the middle in one specimen (Fig. 7). Female genital fold as shown in Fig. 4.

Male: Carapace length/width 1.59. Cheliceral armature (Figs. 11–12): (a) bifurcated at tip; (t), (sl) and (T) present; (AXl) absent; (Gl) present; fang without (EX). Length of anterior row of eyes/length of posterior row of eyes 0.69; distance between anterior median eye and anterior lateral eye/distance between posterior median eye and posterior lateral eye 0.96; distance between anterior lateral eye and posterior lateral eye/distance between anterior median eye and anterior lateral eye 0.35; median ocular area length/width 0.67, anterior width/posterior width 0.77; lateral eyes situated on a tubercle (Fig. 13). Length of leg I/length of carapace 9.06. Male palp: paracymbium bluntly rounded at distal end (Fig. 10); distal end of conductor attenuated and twisted (Fig. 9). Abdomen (Figs. 3, 8) length/width 3.73.

Coloration and markings in alcohol. Female: Carapace brown, chelicera pale brown, fang of chelicera brown, palp pale yellow. First and 2nd legs pale yellow, 3rd femur pale yellow, other segments brown, 4th patella brown, other segments pale yellow. Abdomen dusky brown covered with silver spangles, with black marking.

Male: Carapace, chelicera, fang of chelicera brown. Legs pale yellow. Abdomen dusky brown covered with silver spangles.

*Range.* Japan, New Guinea, Australia.

*Remarks.* The features of Japanese specimens exactly agree with those of Australian specimens except the following point. Japanese male specimen lacks the auxiliary guide tooth of lower row (AXl) of chelicera (Fig. 12; OKUMA, 1987, fig. 5C, ). However, the difference is regarded as geographic or individual variation.

## 摘要

*Tetragnatha bituberculata* L. Koch，1867 チヨコアシナガグモ（新称）を日本新記録種として報告した．日本産とオーストラリア産の標本の比較において，オーストラリア産の雄には見られる上顎下面の補助誘導歯(AXl)が日本産の雄には見られないという差異が認められた．しかし，それ以外の特徴では全く差異はなかったので，この相違は種内の変異とみなした．和名はアシナガグモ類の分類学的研究に偉大な業績を残された故大熊千代子博士に因むものである．

## References

Bonnet, P., 1955. Bibliographia Araneorum, **2** (2), pp. 1-918. Toulouse.

Bradley, H. H. B., 1876. The Araneides of the "Chevert" Expedition. Part I. *Proc. Linn. Soc. N. S. W.*, **1**: 137-150.

Brignoli, P. M., 1983. A Catalogue of the Araneae Described between 1940 and 1981. 755pp. Manchester University Press, Manchester and New York.

Chrysanthus, F., 1975. Further notes on the spiders of New Guinea II. *Zool. Verh.*, (140): 1-50.

Keyserling, E., 1887. Die Arachniden Australiens, nach der Natur beschrieben und abgebildet (zweiter Theil), pp.153-232. Bauer & Raspe, Nürnberg.

Koch, L., 1867. Beschreibungen neuer Arachniden und Myriapoden. *Verh. zool.-bot. Ges. Wien*, **17**: 173-250.

—— 1872. Die Arachniden Australiens, nach der Natur beschrieben und abgebildet, pp. 105-368. Bauer & Raspe, Nürnberg.

Okuma, C., 1987. A revision of the Australian species of the genus *Tetragnatha* (Araneae, Tetragnathidae). *Esakia*, (25): 37-96.

Platnick, N. I., 1989. Advances in Spider Taxonomy, 1981-1987. 673pp. Manchester University Press, Manchester & New York.

Rainbow, W. J., 1911. A Census of Australian Araneidae. *Rec. Austral. Mus.*, **9**: 107-319.

—— 1916. Arachnida from Northern Queensland. Part II. *Ibid.*, **11**: 79-119.

Thorell, T., 1881. Studi sui Ragni Malesi e Papuani. III. Ragni dell' Austro-Malesia e del Capo York, conservati nel Museo Civico di Storia Naturale di Geniva. *Ann. Mus. civ. Stor. nat., Genova*, **17**: vii-xxvii, 1-720.